SOMMAIRE

1. Visualisation de la table de routage.

ont se trouve dans l'onglet COMMAND LINE INTERFACE ou CLI du R11 e ont fais la commande show (abregée en sh) ip route pour voir la configuration ip du routeur R11

```
R11>sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 2 subnets
C       10.0.8.0 is directly connected, FastEthernet0/0
C       10.0.11.0 is directly connected, FastEthernet0/1

R11>
```

Ont Tape plusieurs commandes ping de manière à tester toutes les interfaces qui séparent PC11 de PC12 : PC> ping 10.0.11.1 (R11 côté réseau 11) PC> ping 10.0.8.11 (R11 côté reseau 8)

```
C:\>ping 10.0.11.1

Pinging 10.0.11.1 with 32 bytes of data:

Reply from 10.0.11.1: bytes=32 time<1ms TTL=255
Reply from 10.0.11.1: bytes=32 time<1ms TTL=255
Reply from 10.0.11.1: bytes=32 time<1ms TTL=255
Reply from 10.0.11.1: bytes=32 time<1ms TTL=255

Ping statistics for 10.0.11.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.0.8.11

Pinging 10.0.8.11 with 32 bytes of data:

Reply from 10.0.8.11: bytes=32 time<1ms TTL=255
Reply from 10.0.8.11: bytes=32 time<1ms TTL=255
Reply from 10.0.8.11: bytes=32 time<1ms TTL=255
Reply from 10.0.8.11: bytes=32 time<1ms TTL=255

Ping statistics for 10.0.8.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

en suite ont tappe la commande ping 10.0.8.12 (R12 côté réseau 8)

```
C:\>ping 10.0.8.12

Pinging 10.0.8.12 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.8.12:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

La réponse est impossible car L'interface 10.0.8.12 appartient au routeur R12 et c'est R12 qui doit émettre l'écho en retour mais ce routeur ne dispose pas d'une route vers le réseau de PC11 car le réseau 10.0.11.0 ne lui est pas directement connecté.

2. Ajout d'une route statique sur R12

Ont active a l'onglet CLI et ont appui sur la touche Entrée pour voir apparaître le prompt « R12> » ensuite ont tape en ou ena, qui est l'abrégé de enable,et la commande conf t qui est quand t'a elle l'abrégé de configure terminal.

Ont tape dans le sous-menu de conf t la commande : ip route 10.0.11.0 255.255.255.0 10.0.8.11 elle permet d'affecté une route a r12 (ont sais que ont ce trouve dans le sous-menu configuration car le prompt indique config)

```
R12>
R12>ena
R12#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R12(config)#ip route 10.0.11.0 255.255.255.0 10.0.8.11
R12(config)#
```

en suite ont tappe R12(config)# exit et R12# sh run La commande show running-config p

```
interface FastEthernet0/1
 ip address 10.0.12.1 255.255.255.0
 duplex auto
 speed auto
!
interface Vlan1
 no ip address
 shutdown
!
router rip
!
ip classless
ip route 10.0.11.0 255.255.255.0 10.0.8.11
!
ip flow-export version 9
```

ont est plus dans le menu config car le prompt indique plus (config)

ont verifie que le r12 a bien enregistrée la route en fesaint un sh ip route

```
R12#sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 3 subnets
C       10.0.8.0 is directly connected, FastEthernet0/0
S       10.0.11.0 [1/0] via 10.0.8.11
C       10.0.12.0 is directly connected, FastEthernet0/1

R12#
```

et pour finir ont enregistre la configuration en lançant la commande copy run start

```
R12#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R12#
```

3. Ajout d’une route statique sur R11.

Tapez la commande suivante : PC> ping 10.0.8.12 En principe, cela doit fonctionner étant donné votre intervention sur R12 . Tapez la commande suivante : PC> ping 10.0.12.1 (R12 côté réseau 12)

```
Ping statistics for 10.0.8.12:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
C:\>ping 10.0.8.12

Pinging 10.0.8.12 with 32 bytes of data:

Reply from 10.0.8.12: bytes=32 time<1ms TTL=254
Reply from 10.0.8.12: bytes=32 time=5ms TTL=254
Reply from 10.0.8.12: bytes=32 time<1ms TTL=254
Reply from 10.0.8.12: bytes=32 time<1ms TTL=254

Ping statistics for 10.0.8.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>ping 10.0.12.1

Pinging 10.0.12.1 with 32 bytes of data:

Reply from 10.0.11.1: Destination host unreachable.
Reply from 10.0.11.1: Destination host unreachable.
Reply from 10.0.11.1: Destination host unreachable.
Reply from 10.0.11.1: Destination host unreachable.

Ping statistics for 10.0.12.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

votre commande échoue. Car le en effet, le routeur R11 ne connaît pas le réseau 10.0.12.0/24 car sa table de routage ne comporte, pour l'instant, que les réseaux connectés directement. Il est donc nécessaire d'entrer une route statique sur R11.

Ont clique une fois sur le routeur R11 puis ont active l'onglet CLI. En Appuye sur la touche Entrée pour voir apparaître le prompt R11>. Le ping 10.0.12.1 doit désormais fonctionner. Vérifiez-le .

```
R11>en
R11#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R11(config)#ip route 10.0.12.0 255.255.255.0 10.0.8.12
R11(config)#exit
R11#
%SYS-5-CONFIG_I: Configured from console by console
sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 3 subnets
C       10.0.8.0 is directly connected, FastEthernet0/0
C       10.0.11.0 is directly connected, FastEthernet0/1
S       10.0.12.0 [1/0] via 10.0.8.12

R11#
```

Ont verifie et ont sauvegarde

```
R11#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R11#
```

```
C:\>ping 10.0.12.1

Pinging 10.0.12.1 with 32 bytes of data:

Reply from 10.0.12.1: bytes=32 time<1ms TTL=254
Reply from 10.0.12.1: bytes=32 time<1ms TTL=254
Reply from 10.0.12.1: bytes=32 time<1ms TTL=254
Reply from 10.0.12.1: bytes=32 time=5ms TTL=254

Ping statistics for 10.0.12.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms
```

4. A vous de jouer

ont crée les routes entre les deux zones (.8 et .16)

```
Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 8 subnets
C       10.0.1.0 is directly connected, FastEthernet0/0
C       10.0.2.0 is directly connected, Serial0/0/0
S       10.0.8.0 [1/0] via 10.0.1.8
S       10.0.11.0 [1/0] via 10.0.1.8
S       10.0.12.0 [1/0] via 10.0.1.8
C       10.0.16.0 is directly connected, FastEthernet0/1
S       10.0.21.0 [1/0] via 10.0.16.21
S       10.0.22.0 [1/0] via 10.0.16.22

R16#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R16#
```

```
Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 7 subnets
C       10.0.1.0 is directly connected, FastEthernet0/0
C       10.0.2.0 is directly connected, Serial0/0/0
C       10.0.8.0 is directly connected, FastEthernet0/1
S       10.0.11.0 [1/0] via 10.0.8.11
S       10.0.12.0 [1/0] via 10.0.8.12
S       10.0.21.0 [1/0] via 10.0.1.16
S       10.0.22.0 [1/0] via 10.0.1.16
```

ensuite ont va « montré » au routeur la route a suivre.

R11

```
        P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.8.8
C       10.0.8.0 is directly connected, FastEt
C       10.0.11.0 is directly connected, FastE
S       10.0.12.0 [1/0] via 10.0.8.12
S       10.0.16.0 [1/0] via 10.0.1.16
S       10.0.21.0 [1/0] via 10.0.1.8
S       10.0.22.0 [1/0] via 10.0.1.8

R11#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R11#
```

r12

```
     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.8.8
C       10.0.8.0 is directly connected, FastEthernet0/0
S       10.0.11.0 [1/0] via 10.0.8.11
C       10.0.12.0 is directly connected, FastEthernet0/1
S       10.0.16.0 [1/0] via 10.0.1.16
S       10.0.21.0 [1/0] via 10.0.1.8
S       10.0.22.0 [1/0] via 10.0.1.8

R12#
```

r21

```
     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.16.16
S       10.0.8.0 [1/0] via 10.0.1.8
S       10.0.11.0 [1/0] via 10.0.8.8
S       10.0.12.0 [1/0] via 10.0.8.8
C       10.0.16.0 is directly connected, FastEthernet0/0
C       10.0.21.0 is directly connected, FastEthernet0/1
S       10.0.22.0 [1/0] via 10.0.16.22

R21#
```

r22

```
     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.16.16
S       10.0.8.0 [1/0] via 10.0.1.8
S       10.0.11.0 [1/0] via 10.0.8.8
S       10.0.12.0 [1/0] via 10.0.8.8
C       10.0.16.0 is directly connected, FastEthernet0/0
S       10.0.21.0 [1/0] via 10.0.16.21
C       10.0.22.0 is directly connected, FastEthernet0/1
```

et ont ping tout les pc pour testé la connextivité

PC11

```
C:\>ping 10.0.21.2

Pinging 10.0.21.2 with 32 bytes of data:

Reply from 10.0.21.2: bytes=32 time=10ms TTL=124
Reply from 10.0.21.2: bytes=32 time=11ms TTL=124
Reply from 10.0.21.2: bytes=32 time=10ms TTL=124
Reply from 10.0.21.2: bytes=32 time<1ms TTL=124

Ping statistics for 10.0.21.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 7ms

C:\>ping 10.0.22.2

Pinging 10.0.22.2 with 32 bytes of data:

Reply from 10.0.22.2: bytes=32 time=10ms TTL=124
Reply from 10.0.22.2: bytes=32 time=12ms TTL=124
Reply from 10.0.22.2: bytes=32 time=11ms TTL=124
Reply from 10.0.22.2: bytes=32 time=11ms TTL=124

Ping statistics for 10.0.22.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 12ms, Average = 11ms

C:\>ping 10.0.12.2

Pinging 10.0.12.2 with 32 bytes of data:

Reply from 10.0.12.2: bytes=32 time<1ms TTL=126
Reply from 10.0.12.2: bytes=32 time<1ms TTL=126
Reply from 10.0.12.2: bytes=32 time=11ms TTL=126
Reply from 10.0.12.2: bytes=32 time<1ms TTL=126
```

pc12

```
C:\>ping 10.0.11.2

Pinging 10.0.11.2 with 32 bytes of data:

Request timed out.
Reply from 10.0.11.2: bytes=32 time=11ms TTL=126
Reply from 10.0.11.2: bytes=32 time<1ms TTL=126
Reply from 10.0.11.2: bytes=32 time<1ms TTL=126

Ping statistics for 10.0.11.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 3ms

C:\>ping 10.0.21.2

Pinging 10.0.21.2 with 32 bytes of data:

Request timed out.
Reply from 10.0.21.2: bytes=32 time=11ms TTL=124
Reply from 10.0.21.2: bytes=32 time=27ms TTL=124
Reply from 10.0.21.2: bytes=32 time=22ms TTL=124

Ping statistics for 10.0.21.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 11ms, Maximum = 27ms, Average = 20ms

C:\>ping 10.0.22.2

Pinging 10.0.22.2 with 32 bytes of data:

Reply from 10.0.22.2: bytes=32 time=10ms TTL=124
Reply from 10.0.22.2: bytes=32 time=10ms TTL=124
Reply from 10.0.22.2: bytes=32 time=12ms TTL=124
Reply from 10.0.22.2: bytes=32 time=11ms TTL=124
```

pc22

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.12.2

Pinging 10.0.12.2 with 32 bytes of data:

Reply from 10.0.12.2: bytes=32 time=10ms TTL=124
Reply from 10.0.12.2: bytes=32 time=17ms TTL=124
Reply from 10.0.12.2: bytes=32 time=11ms TTL=124
Reply from 10.0.12.2: bytes=32 time=10ms TTL=124

Ping statistics for 10.0.12.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 17ms, Average = 12ms

C:\>ping 10.0.11.2

Pinging 10.0.11.2 with 32 bytes of data:

Reply from 10.0.11.2: bytes=32 time=10ms TTL=124
Reply from 10.0.11.2: bytes=32 time=10ms TTL=124
Reply from 10.0.11.2: bytes=32 time=10ms TTL=124
Reply from 10.0.11.2: bytes=32 time=10ms TTL=124

Ping statistics for 10.0.11.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 10ms, Average = 10ms

C:\>ping 10.0.21.2

Pinging 10.0.21.2 with 32 bytes of data:

Reply from 10.0.21.2: bytes=32 time=8ms TTL=128
Reply from 10.0.21.2: bytes=32 time=10ms TTL=128
Reply from 10.0.21.2: bytes=32 time=3ms TTL=128
Reply from 10.0.21.2: bytes=32 time<1ms TTL=128
```

pc21

```
C:\>ping 10.0.11.2

Pinging 10.0.11.2 with 32 bytes of data:

Reply from 10.0.11.2: bytes=32 time=10ms TTL=124
Reply from 10.0.11.2: bytes=32 time=11ms TTL=124
Reply from 10.0.11.2: bytes=32 time=1ms TTL=124
Reply from 10.0.11.2: bytes=32 time=14ms TTL=124

Ping statistics for 10.0.11.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 14ms, Average = 9ms

C:\>ping 10.0.12.2

Pinging 10.0.12.2 with 32 bytes of data:

Reply from 10.0.12.2: bytes=32 time=10ms TTL=124
Reply from 10.0.12.2: bytes=32 time=22ms TTL=124
Reply from 10.0.12.2: bytes=32 time=10ms TTL=124
Reply from 10.0.12.2: bytes=32 time<1ms TTL=124

Ping statistics for 10.0.12.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 22ms, Average = 10ms

C:\>ping 10.0.21.2

Pinging 10.0.21.2 with 32 bytes of data:

Request timed out.
Reply from 10.0.21.2: bytes=32 time<1ms TTL=126
Reply from 10.0.21.2: bytes=32 time<1ms TTL=126
Reply from 10.0.21.2: bytes=32 time<1ms TTL=126
```